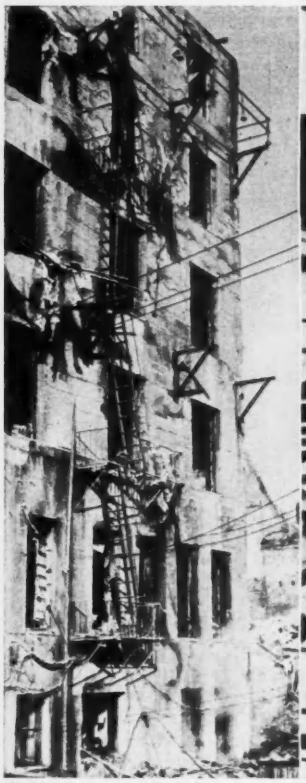
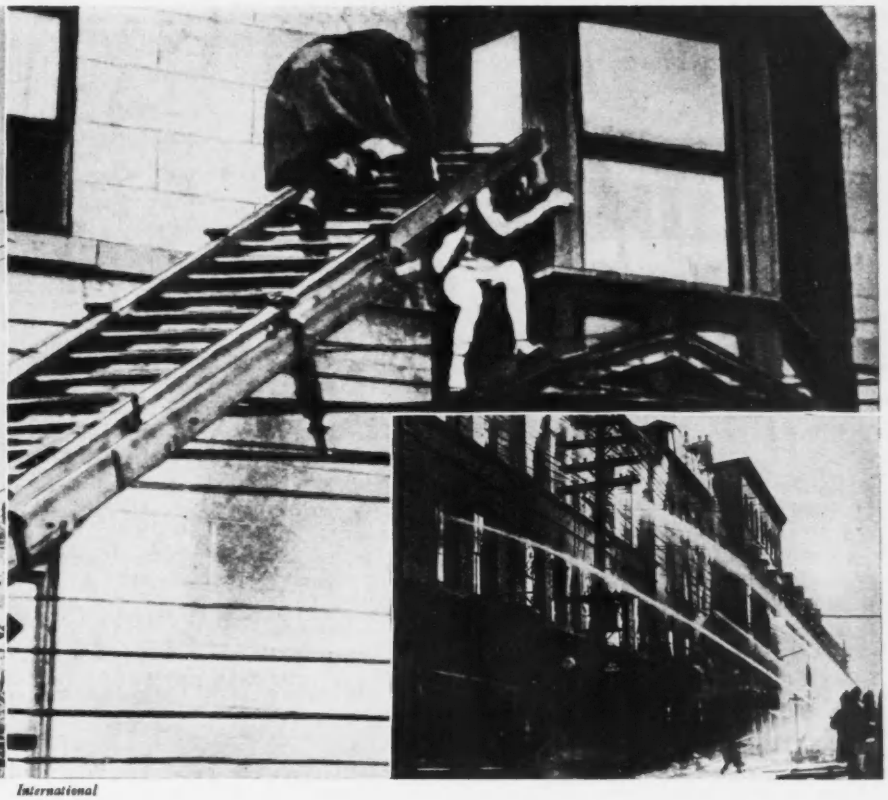
Volunteer Firemen

APRIL
1939

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street INTERNATIONAL Boston, Massachusetts





Halifax Chronicle and Daily Star *International*

28 DEAD IN HALIFAX HOTEL FIRE

FIRE in the Queen Hotel at Halifax, Nova Scotia, on the early morning of March 2, 1939, took an estimated toll of 28 lives. When firemen arrived in answer to a telephone call, flames were sweeping through the entire hotel. Occupants were dropping from the windows. The fire department made many thrilling rescues, but the use of ladders was handicapped by overhead wires. The fire department manpower and ladder equipment available could not possibly take care of the emergency.

No new lessons were learned from this fire. It was virtually a repetition of the circumstances of the Terminal Hotel disaster in Atlanta, Ga., in which 35 persons died May 16, 1938. Both buildings were of old, brick-joisted construction with open stairs and elevator shafts. Fires starting in the basement could sweep up these unprotected openings, making the buildings veritable death traps. Many of the victims died in their sleep.

The hotel had no watchman service at the time of fire. The fire was well advanced before anyone discovered it. Flames drove the telephone operator away from his switchboard before he could warn any of the guests. The disaster again emphasized that such old buildings involving potentialities for large loss of life should be protected with automatic fire alarm or automatic sprinkler equipment.

The Queen Hotel consisted of several buildings. The fire started above the furnace rooms in an old, brick-joisted north section. The heating equipment is believed to have been defective. There had been complaints about coal gas fumes all winter.

The building had a 5-story reinforced concrete wing. This was inadequately cut off from the rest of the building and the picture at the left shows this fire-resistive structure completely gutted. This same picture shows the delusion of safety in outside fire escapes. Those shown were quickly cut off by flames coming from the open windows on the lower floors.

So complete was the destruction that few of the victims' bodies could be identified. Before being brought under control the blaze also damaged adjoining business buildings and caused a loss estimated as high as $800,000.

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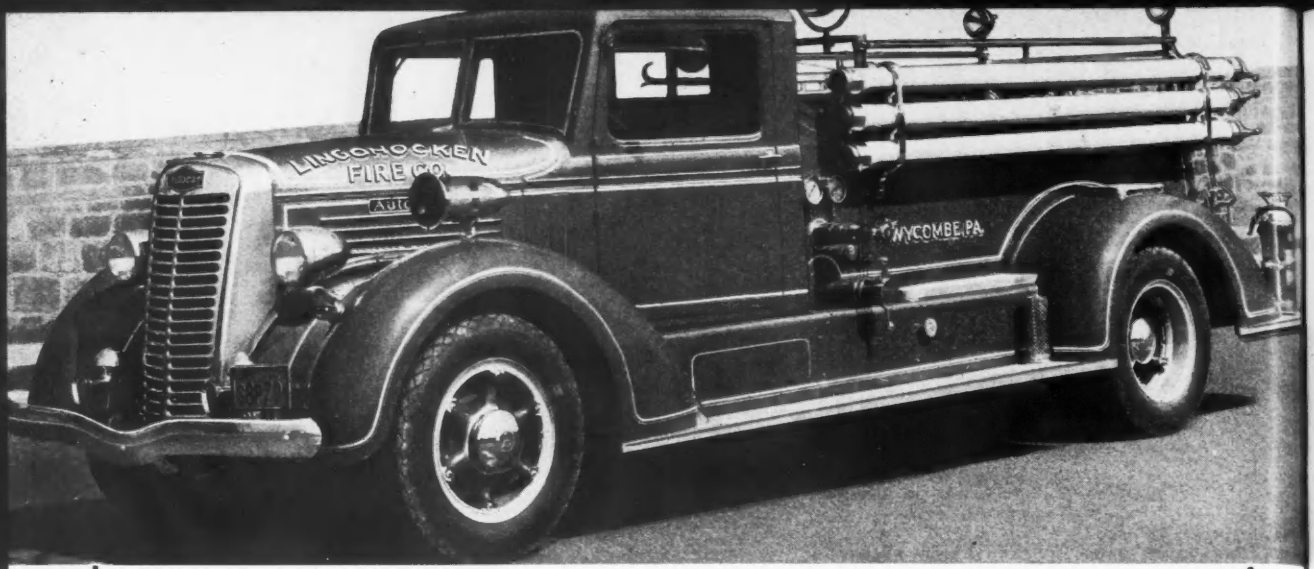


Whoever Thought Before of the Comfort of a Fireman?

That's just what was done when this Triple Combination was custom built by us for the Lingohocken Fire Company in Wycombe, Pennsylvania.

They wanted a fully enclosed compartment for the driver, and our engineers designed this comfortable cab which exactly filled the bill. If they had asked for a two-seated cab, able to carry five or six men, we could have designed that too.

If you want to know more about this particular job, ask us for photographs of it, and for details of the equipment that it carries. You will see that the roomy cab did not interfere with its ability to carry all essential equipment conveniently.

Bear in mind, also, that Autocar Fire Apparatus averages to cost less.

AUTOCAR FIRE APPARATUS

The Autocar Company, Ardmore, Pa.

Established 1897

"Follow the Leaders For They Know the Way"

IN the Spring months cities and towns throughout the United States and Canada begin their annual clean-up campaigns. This is the one time of the year when every individual and organization, as well as the fire department, cooperates in helping to increase the good appearance of the community and make it safer from fire.

The Annual Clean-Up Campaign is sponsored by the N. F. P. A. Committee on Fire Prevention and Clean-up Campaign. T. Alfred Fleming, 85 John St., New York, N. Y., is chairman.

The purposes of this campaign for civic improvement are similar to those of Fire Prevention Week. In addition it promotes health and sanitation, reduces accidents and stimulates local business.

The majority of fires start in basements, attics, closets and similar places where rubbish and unnecessary accumulations of combustible materials are allowed to pile up. Rubbish may be the direct cause of fire by spontaneous ignition and all accumulations of combustible material favor the start of fire caused by matches, cigarettes, or any chance spark.

Approximately 50 per cent of the loss of life by fire occurs in homes, and a study of 50,000 dwelling fires showed that nearly 50 per cent of them were caused by smoking or matches and rubbish.

The removal of rubbish and maintenance of general cleanliness should be a continuous activity, but experience shows that an intensive campaign is needed. During the winter months, useless materials accumulate and a spring clean-up campaign is necessary.

CLEANING up rubbish and accumulations of combustibles is the largest single factor in fire prevention. Experience has demonstrated that a general campaign followed up by periodic and systematic inspections to eliminate and keep down all accumulations of material which favor the start of a fire in a community may greatly reduce its fire losses.

Fire departments take the lead in organizing a committee and getting other organizations interested and started in such a campaign. Other organizations and city departments which should be invited to participate and should be represented on the committee are: Chamber of Commerce, Department of Health, Division of Sanitation, Civic Clubs, School Department, 4-H Clubs, Women's Organizations, Merchants' Associations, Executives of the City, Fire Prevention Bureau, Boy and Girl Scouts, Leading Industries, and Resident Railroad Officials.

THE week set as Clean-Up Week is observed by the fire department making special inspections of buildings, yards and lots to get people to remove fire hazards and make their property more attractive. The community may be divided into districts and groups of men assigned to work in each area.

It is not enough to tell people that they ought to get rid of any rubbish in their cellars or attics. It is a good plan for the fire department to arrange to have rubbish removed in trucks and if the city or town has not had regular rubbish removal service it is a beneficial fire prevention move to get such a service organized. Some fire departments make public announcements each day of the number of truck loads of rubbish disposed of. During Clean-Up Week they have the citizens call them if they want rubbish removed.

In making dwelling inspections firemen can point out that much of the material causing serious fire hazards in basements and attics does not consist of waste paper or rags but hundreds of combustible objects of house furnishings or clothing which have been put aside as no longer needed. The chances are that if old lamp shades, ladies' old hats or other worn clothing is sent to the basement or attic because the styles have changed, they will not be used again and should be thrown out or given away.

Firemen in their inspections should point out the hazards of wooden rubbish barrels and recommend metal containers. If there is no regular rubbish removal system they should point out the desirability of using incinerators which will not send sparks over the neighborhood.

Banners and signs may be used on fire apparatus to bring the movement to the attention of the public. Home inspection blanks may be furnished school children so that they may inspect their own homes. Contests may be held and prizes offered for essays on the benefits and advantages to the community of a clean-up campaign. "Before and after" window displays are always effective.

Preceding the week for which the campaign is set, much publicity should be given to it in the local newspaper. Newspapers are leaders in civic programs and are glad to carry announcements, news articles on aims and accomplishments, and pictures. Local merchants are usually glad to cooperate because the campaign increases their sales of clean-up and paint-up materials.

A NEW pamphlet on what to do during a week's campaign has already been mailed to fire departments which are members of the Volunteer Firemen's Section of the N. F. P. A. This pamphlet gives suggestions for a program of work to do each day of the week set aside for the campaign. There is a sample proclamation which the mayor may issue to inaugurate the program.

The pamphlet contains a home inspection blank which may be printed up in large quantities, and passed out to the school children. This is a very effective method for fire departments to get fire prevention messages across to the parents as well as to the children.

A special radio interview for fire chiefs with local announcers has also been prepared by the N. F. P. A. Single copies will be sent free to anyone interested.

The attractive two color poster shown above for use in the 1939 campaign may be obtained from the National Fire Protection Association for $1.50 per hundred. This poster is printed in 12 in. by 16 in. size, on good paper, and has space at the bottom for printing the name of the fire department if desired.

Mats and copy for newspaper publicity are available from the National Clean-Up and Paint-Up Campaign Bureau, 2201 New York Ave., N. W., Washington, D. C.

A full and complete report of the campaign should be made to the Chairman of the Committee on Fire Prevention and Clean-Up Campaign for the National Fire Protection Association. It is desired that copies of newspaper articles, prize essays, winning posters, and all other material be included, with a full outline of the results.

Also those desiring assistance in organizing their local campaigns should write to the Chairman of the N.F.P.A. Clean-Up Committee.

Climbing
THE LADDER

GOOD form is the deciding factor in most sports between great playing ability and mediocrity. So spectators applaud at fires or drills when a fireman climbs right up a ladder as if he knows his business. The man who climbs a ladder well has good form and a certain well-defined rhythm. Both are the result of correct instruction and practice.

A good ladderman stays at arms length from the ladder. Good form consists in keeping the body erect and the arms straight but not tense. When a man holds himself rigid and hugs the ladder he is in danger of falling because he does not have control of his body. Also he cannot place his feet on the rungs properly as his knees will collide with the rungs.

In order to keep the ladder steady it should be climbed near the center of the rungs. The climber should not look down or watch his feet. Rather he should look slightly upward in the direction the hands are going. The hands should be moved on the rungs at a level between the waist and head. The rungs should be grasped by the hands with the palms down and with the thumbs around the rungs. This will avoid the body sway and splinters frequently encountered when climbing with the hands on the beams. This method is considered the safest because a much firmer grip may be had on the rungs than on the beams, particularly if the climber's hands are not large. The use of the rungs in climbing is advisable also because the hands thus test the rungs. A defective rung may be detected before placing a foot thereon.

Acknowledgment is made of the cooperation of the following men who reviewed the text on ladder climbing: Chief J. Ray Pence, Stillwater, Oklahoma; Chief G. Frank Williams, Texas Firemen's Training School; Battalion Chief Robert B. Rogers, Seattle, Washington; and Harry K. Rogers, Chief Engineer, Fire Prevention Department, Western Actuarial Bureau.

There can be found those who will argue the advantages of sliding the hands up the spars of a ladder on the basis that this provides a substantially constant hold.

The legs, and not the hands, carry the weight of the body when climbing. At each step the ball of the foot and not the arch should be placed on the rungs. A foot should be placed on each rung. However, some men secure the best climbing rhythm by taking every other rung with the hands and every rung with a foot. It is bad practice to run up or down a ladder. It's best to climb briskly, but smoothly.

Advance Planning Saves French National Shrine

THE Hotel des Invalides is the national shrine of the French Army, housing valuable records and trophies. It also houses the office of the general staff of the Paris garrison. It is not a modern building; the walls are stone and the interior frame work of the structure is of heavy timber with many wooden partitions.

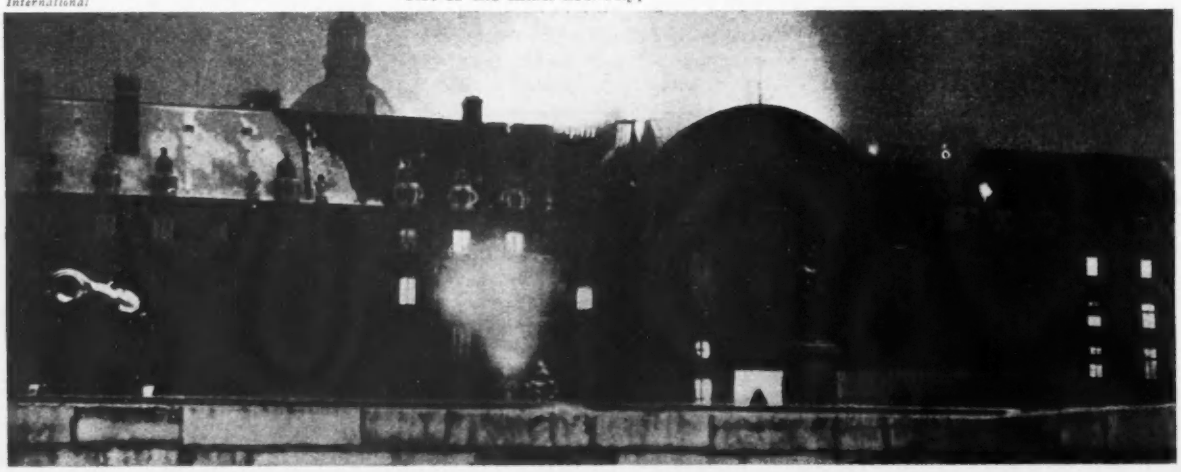
Last December 23, this historical building took fire. The Regiment de Sapeurs-Pompiers (Paris Fire Department) controlled the fire in the face of handicaps including delayed alarm, severe cold, snow and high winds. The story was regarded as sufficiently important to be published in FIRE, official journal of the British fire service. It is an excellent object lesson in how much a fire department can do through advance planning.

The fire was discovered shortly before 9:15 in the evening, when a sentry saw a ruddy glow at the roof of the building, opposite the dome under which lie the tombs of Napoleon and Marshal Foch. The sentry immediately reported the fire to his superiors but apparently failed to pull a fire alarm box. There was nine minutes delay before the fire brigade was notified.

In European fire departments calls are handled through local fire stations instead of through a central fire alarm office and each fire company is normally expected to handle first alarm fires from its own district. At 9:24 p.m. two telephone calls and a box alarm were received simultaneously at the nearest station.

BECAUSE of the importance of the Hotel des Invalides it had been planned that in the event of a fire a heavy fire fighting force would be sent on the first call. Accordingly, three company districts responded at once

International



The Hotel des Invalides, shrine of the French Army, during the serious fire last winter. Most of the fire fighting was done from the inside but a stream from an aerial ladder is visible to the left of the main doorway.

Architect's sketch of one of the four new farm products research laboratories of the United States Department of Agriculture. Insert map outlines area to be served by each.

with a total of two 500 gallon pumpers, a 1200 gallon pumper, two tenders or booster trucks, an extension ladder, an aerial ladder and a salvage truck.

The advance planning for this fire included effective placing of apparatus and hose streams so as to quickly surround the blaze. Accordingly three streams were immediately taken from the first pumper to arrive at the fire. Two of these were taken into the attic and the third was used to protect a nearby exposure. It was possible to run three lines from this pumper because the Paris Fire Brigade sends more men with each piece of apparatus than is common practice in the United States and Canada. The rule in Paris and other European cities is fewer companies, but more manpower per company.

OTHER first alarm crews attacked the fire with streams from aerial ladders at both sides of the roof and also from inside stairways. In all, ten streams were employed to quickly surround the blaze. Four of the inside streams were supplied through small size hose used to minimize water damage to contents. Due to the high wind, Colonel Barrière, chief of the regiment, called four additional pumpers to stand by as a precautionary measure. After a little over two hours of fire fighting the blaze was brought under control. Damage was confined to attic and roof areas about 300 feet long. The total damage was less than $7,000. Much of the credit for keeping the loss down is due to the crews of four salvage trucks who protected the contents of the building.

The total number of pieces of apparatus called to this fire, including three floodlight trucks and the salvage trucks, was only 19 machines.

Investigation showed that the fire was due to an improperly installed portable stove installed during the cold weather by soldiers quartered in an otherwise unheated attic room.

New Laboratories for Farm Products Research

THE making of artificial silk from wood and artificial rubber from goldenrod are but two of thousands of miracles of modern chemistry. To find ways of performing similar miracles with common farm products Congress last year authorized four great farm research laboratories to be operated by the U. S. Department of Agriculture. It will be their job to divert surplus or waste agricultural products into materials for industrial use. This is expected to bring greater prosperity to the farmer and to supply industry with new raw materials.

The planning and construction details of these great laboratories are a responsibility of Dr. David J. Price, N. F. P. A. Vice President. Dr. Price, well known to firemen in all parts of the country, is Principal Engineer in charge of the Chemical Engineering Research Division of the Bureau of Chemistry and Soils of the U. S. Department of Agriculture. Dr. Price is Chairman of the important N. F. P. A. committees on Dust Explosions and Farm Fire Protection. The latter committee has prepared the N. F. P. A. pamphlet on Rural Fire Departments covering the subjects of apparatus, organization and rules for volunteer fire departments.

Each laboratory is to be located to serve one great geographical area and each will specialize on the principal crops in its own territory. These include for the South cotton, peanuts and sweet potatoes; for the West, fruits, vegetables, wheat, potatoes and alfalfa; North, corn, wheat and agricultural wastes; and East, potatoes, tobacco, milk products, apples and vegetables. Each laboratory will eventually be manned by a staff of about 250 with work in charge of some 25 top-flight chemical engineers and research men.

The Personal Automobiles of Volunteer Firemen

Many volunteer firemen have found it helpful in getting speedily and safely to fires to have their personal car identified as an emergency vehicle by equipping it with a siren, red warning light, and fire department marker.

Thousands of firemen carry some fire kit in their personal automobiles. An essential item for the individual volunteer is a fire coat. He needs it if he is to respond directly to the fire. If he gets to the fire before the fire apparatus, he doesn't have to wait for clothing in order to go to work. In case he arrives after fire lines are formed, the coat is a badge of authority which will take him through.

If possible, rubber boots and a fire helmet should, of course, be carried. The danger of head injuries makes it important for a helmet to be worn at every building fire.

FIREMEN will argue that every automobile should carry a fire extinguisher. Most firemen carry one in their car. They don't like the idea of discovering a fire and having to watch it spread because they have nothing available with which to fight it. In most cases an approved 1 or 1½-quart carbon tetrachloride extinguisher is a handy unit to carry. It is a non-freezing type and will handle flammable liquid and electrical fires. Others prefer a larger unit such as the portable pump tank which is especially useful for brush and grass fire work. It can be filled with a non-freezing solution during cold weather. Such an extinguisher will often enable a man to hold a house fire in check.

Additional personal equipment which would be useful to carry includes such items as a flashlight, a small claw bar for getting at fires in concealed spaces, and a first aid kit.

Firemen's Training

SUGGESTIONS FOR INSTRUCTORS

THE vast majority of fire departments consist of a single fire company with one or two pieces of apparatus—usually including a pumper. Here is an outline of a suggested introductory course of training for such departments. Any fireman who has trained to be an instructor may be asked to give such a course at any time.

It can be given in ten sessions of about three hours each—for example, one evening a week for ten weeks, or ten consecutive evenings intensively. While it is obviously impossible to give a complete course of training in the sessions of such a short course, a relatively few hours' instruction markedly improves the fire fighting ability and efficiency of a department. Most important, it increases the interest of members.

The outline makes no pretense of being 100 percent complete. Its subject matter is practical, down-to-earth.

It gives a man tackling a training job for the first time a place from which to start his instruction. The outline is flexible and the instructor can adapt it to conditions as he finds them. He can go as far with it as time and his own abilities and resourcefulness permit.

OUTLINE OF TEN - UNIT INTRODUCTORY COURSE

First Session

Apparatus, Tools and Equipment

Get the fire department class around the apparatus. Use the apparatus as the lesson subject. Find out what members know about the piece. Ask whose job it is to check such things as gasoline, oil, greasing, radiator, tires and battery. If there is not already a routine for checking up on these details at proper intervals get the class, then and there, to work one out. (A good plan is recommended in the N. F. P. A. pamphlet, "Rural Fire Departments," 20c). Next talk about the booster tank; explain the various connections. A good exercise is to get the group to figure out how long water in the tank will supply booster or 1½-inch streams with various sizes of nozzles. Next in turn discuss all of the equipment on the apparatus, such as extinguishers, axes, poles, bars, rope tools, gas masks, lighting equipment. Make sure the class knows the special purposes of each type of extinguisher, how to recharge it and how to take care of it. Show how to carry an axe and how to use it for cutting open doors and other jobs. Following this discuss the use of poles, bars and other small tools, going as far as time permits into the whole subject of forcible entry. Next take up rope tools, including lines for hoisting and rescue work. If time permits give some instruction in the commoner knots used by the fire department, such as the bowline and the round-turn with two half hitches (used in hoisting operations). If gas masks or other respiratory equipment is carried, make sure that the class knows the special situation for which these devices are best suited. This approach is recommended for the first training session because it immediately creates an interest in the training work and because it enables the instructor to find out pretty generally how much the members of the department already have had in the way of instruction.

Second Session

Care of Hose

Point out how cotton rubber lined fire hose is constructed and the special points to be observed in giving it proper care. Show recommended methods of loading hose on the fire truck, such as the accordion load and horseshoe or U load. Explain the advantages and disadvantages of each. Explain (if possible demonstrate) how hose should be tested and also how to wash and dry the hose. (Has the department a proper tower or rack for drying?) Show how to make a doughnut roll. Describe the difference between cotton rubber lined hose and the rubber lined hose with rubber cover used for booster hose and suction hose. If time permits, discuss unlined linen hose which is used in forest fire fighting and on standpipes in buildings. Explain how the proper maintenance of this hose differs from the care required for cotton rubber lined hose (for example, water and frequent use is a good thing for rubber lined hose, but not for unlined linen hose). Discuss hose couplings, their inspection and care. (Is hose thread standard? Do neighboring departments have similar threads?) Much of the material for this session will be found in the N. F. P. A. fire department manual on Hose and Hose Couplings (25c).

Third Session

Hose Evolutions

Start the session by running through the operation of taking a hydrant in a hydrant-to-fire layout of a single line of 2½-inch hose. Check the methods used. This presents the opportunity of showing the right way to couple hose, to put on nozzles and also to discuss the use of hose clamps and methods of protecting hose at fires. Next cover the laying of short lines by hand. Spend a substantial part of the session in practice of these evolutions. If time permits, show the shoulder hose carry, also try the hydrant-to-fire layout using the doughnut roll.

The evolutions suggested to be covered in this session, and continued in the following session on hose evolutions and the subsequent one on ladder evolutions have all been described in detail in various recent issues of VOLUNTEER FIREMEN. Instructors may have specific methods of their own they prefer to use but instructors who have files of back copies may find the illustrated material useful in laying out the instruction.

Fourth Session

Hose Evolutions

Continue the basic hose evolutions, covering any of the items which time did not permit covering at the previous session. Then have the class practice a fire-to-hydrant layout. Demonstrate skid load for a fire-to-hydrant layout. If the truck has a divided hose body, show how this may be used in a fire-to-hydrant layout. Show how two lines may be laid at once, hydrant-to-fire, with an adaptation of the divided hose body hook-up.

Fifth Session

Ladder Evolutions

Start the session with instruction in carrying ladders. Then cover a standard method for raising straight ladders with two men. Devote some time to practising this raise. Practice climbing the ladder, taking leg locks. Show how a ladder should be placed in a window or against a cornice and dogged. Then cover the placing of roof ladders. Practice carrying a dry line up a ladder, making the necessary ties to the ladder and operating a stream. If time permits, go into the handling of long extension ladders.

Sixth Session

Salvaging Operations

Most departments have waterproof covers for salvage work, but if not, bring one or two covers, squeegees and enough other small tools to handle the work of this session. Start by showing cover folds. Discuss care of covers including procedure for cleaning, drying and mending. Next take up the throwing of covers, practicing suitable methods for covering stock on counters, on shelves and in piles. Practice covering of household furniture, the making of catchalls, and other routine salvage jobs. Next present methods of removing water from buildings during and after a fire. This gives an opportunity to describe the use of special salvage tools including brooms, mops and squeegees. The discussion of salvaging operations offers an excellent introduction to the whole general subject of fire fighting operations since with it can be covered details of the handling of hose streams to minimize water damage, methods of forcing entrance to a building, tracing the fire through partitions and ceilings, and ventilation operations. It's also desirable if time permits to cover the special problems of buildings protected by automatic sprinklers. Finally, treat methods of protecting buildings after a fire has occurred including the covering of holes in the roof. Outline a procedure for renting covers. If the department is not doing salvage work before this session, this will show how readily they can finance and maintain a supply of covers through a proper renting policy and through the good will for the department which this type of work engenders. See the pamphlet "Salvage" by Frank C. McAuliffe (published by the National Board of Fire Underwriters, 85 John Street, New York, N. Y.) and the N. F. P. A. pamphlet on Salvaging Operations.

Seventh Session

Water System

Where does the water used for fire fighting come from? It's best to treat this whole subject not in generalities but by tying it down to the local water system if any. Get the class to trace the water from its source (reservoir, wells, etc.) through the pumping plant, elevated storage reservoirs, force mains from the pumps or reservoirs to the center of town and through the underground piping system to the hydrants. A good map of the water system is a great help. The underwriters' bureau frequently has a map of the water system which is up to date and useful

for these classes. Or perhaps the local water department has a good up-to-date map which it can lend. In many cases the water department would be glad to send a man to attend this session with the map to help explain it. Compare the capacity of the pump at the town's water plant with the capacity of the fire department pumper. Explain the difference between the amount of water available from a dead end main and from a main which is fed from two directions. Get the class to compute the number of fire streams that the water system can furnish at a building on fire in the principal mercantile district. Next take up the hydrants. If possible, go to a typical hydrant and operate it. Ask what size of main feeds the hydrant, what the size of the connection is between the main and the hydrant. Find out if there is a gate valve between the main and the hydrant other than the valve in the hydrant itself. Ask what other valves there are on the underground piping system which the fire department ought to know about. Find out if a record is kept of these valves. See if the fire department carries a gate valve wrench or if someone from the water department is required to be on hand to operate such valve. Explain to the class the significance of these inquiries. So far as time permits, get each member of the class to actually operate the hydrant. Get him to note the number of turns required to open the hydrant full. (Do all hydrants in town open the same way? Why is the hydrant nut five-cornered?) Get the class to explain what if anything is done to regularly inspect, lubricate and paint the hydrants. Finally, if time permits, have the class make a list of all buildings having automatic sprinkler systems. If the members of the class don't know, tell them to make such a list and if possible find out something about the details of sprinkler systems before the session on fire fighting.

Eighth Session

Pumper Operation

It's too much to expect one session to make every member of a class an expert pumper operator. Nevertheless, the understanding which every member of the department has as to what they can do and what they can't do with a pumper can be improved. Limit the instruction to one particular type of pump. If, for example, the department has a centrifugal pump, explain operation of a centrifugal pump and don't confuse the teaching with discussion of problems involving piston or rotary pumps unless the class runs for enough hours to give time for all types of pumps to be adequately treated. With limited time it is probably best to teach operation of the pumper at draft. Select a suitable location for drafting, explain getting the pumper in position and the proper placing of suction hose. Show how to keep the suction strainer clear (there's the trick of putting a bushel basket on the strainer end). As a start, pump into two or more short lines with large nozzles to show how to get the maximum capacity of the pump. Two 100-foot lines with 1⅛ or 1¼ inch nozzles, for example, would be about right for a 500 gallon per minute pump. With larger pump capacities, lines may be siamesed into deluge sets with large nozzles. Tie all nozzles securely. (It's dangerous not to and if the nozzles are tied all members of the class can devote their attention to the instruction.) Make a pumper layout with a long line to show the operation against pressure. In each case have members of the class compute the flows to be expected from the nozzle layout. This is a good chance for them to brush up on simple hydraulics of hose streams and shows how these calculations are used to estimate the pressure at which the pumper should be operated. If time permits, make similar layouts operating the pumper from a hydrant supply. Get as many members of the class as possible to actually run the pump. Have them go through all the operations of hooking up the suction, starting the pump, and getting water at the nozzle. They should run the pump for both capacity and pressure conditions. Have them explain the function of all valves, gauges and controls to be sure these are understood. At least every man regularly assigned to operate the pump should have his methods checked in the course of instruction. Explain the care of the pumper at the fire so each man understands the lubrication and cooling system and what is necessary to protect the equipment in freezing weather. Finally, cover the washing, draining and lubrication of the pumper after a run.

Ninth Session

Investigation of Fires —Inspection Work

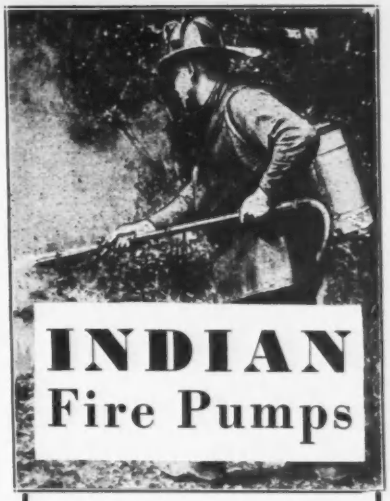
Investigation of fires will necessarily have to be treated briefly. Outline what information should go in any report on a fire. All members of the class should know that the state fire marshal or proper police official should be notified in case of a suspicious fire. Describe what should be done to protect evidence of arson.

Explain the reasons for inspection work: to familiarize men with conditions in buildings where they may have to fight fires, to clean up rubbish, to maintain life safety, to keep fire appliances in order, to control special hazards, to get conflagration breeding buildings demolished. Outline the ordinances which authorize the fire department to make inspections. Describe the provisions of the state fire marshal law. Discuss in detail what to do to get a bad rubbish condition cleared up or what to do in case of an inspection where an uncharged fire extinguisher is found. Give very briefly suggestions on how certain matters might be handled such as special fire hazards, defects in protective equipment, permits and licenses, blocked exits, electrical defects and dilapidated buildings. Keep in mind that the action to suggest to a volunteer department may be somewhat different from that to suggest to a department with full-time personnel. If time permits, discuss dwelling house inspections. Most of this session should be taken up with making an actual inspection of a building, preferably one of the more important buildings in the community. In order to cover the widest possible range of inspection problems it is best to choose a fairly large building with brick walls and wooden interior construction. A school building will often well serve. Take the class through the building pointing out the features a good inspector would note. Have the class make a record of their observations. Tell them you expect them to bring their notes to the session of the class on fire fighting.

Tenth Session

Fire Fighting

As a minimum, the principal features of fighting fires in dwellings and small stores should be covered in this session. Particular emphasis should be given to procedure in basement, attic, partition and chimney fires. This will permit instruction in various details of practice of forcible entry, ventilation, salvaging operations, and overhauling work. The class should be asked to develop a general order of procedure which they would recommend be followed at fires. (What should they do first? What next?) Use the building which was inspected by the group as a specific fire fighting problem. Call on the class to recite features important to fire fighting which their inspection brought to light. This instruction and discussion should leave the class with a sound understanding of the importance of planning fire fighting operations before the fire occurs. If there are buildings in the town which have automatic sprinkler protection, a separate problem might be made of fighting a fire in a sprinklered building. This will give the instructor a chance to identify for the class the parts of a sprinkler system —street connection, control valve, alarm valve, piping arrangement, drips, fire department connection—and the establishment of a general procedure for fighting fires. See the N. F. P. A. pamphlet "Use of Automatic Sprinkler Systems by Fire Departments" (10c).



Powerful 50 ft. continuous unbroken stream • 5 gal. rust-proof tank • refillable • portable by hand or on the back.

For the best all round fire fighting weapon, there is nothing that can compete with the Indian. All that is needed is plain water, always available for quick filling. The strong 50 ft. stream gets right at any blaze in a jiffy. The air conditioned tank which holds 5 gallons of water is easily and comfortably carried on the back or by hand. Fire fighters everywhere, depend on Indians for fighting grass, rubbish, roof and spot fires.

RUST PROOF TANK

The rustless tank can be kept filled with water ready for instant use. Note how fire pump is carried on the operator's back in view above with arms left free for action in any direction.

Write today for free catalog of our complete line with prices and testimonials from users everywhere.

D. B. SMITH & CO.

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FIGHT FIRE WITH INDIANS

THE INSTANT
(LOADED-STREAM) TYPE

The ultimate in fire protection equipment — for use in winter months (as well as summer) and which both fire departments and private industry are recognizing as the last word in chemical fire extinguishment.

QUICK, DEPENDABLE

OPERATES EFFECTUALLY IN ANY TEMPERATURE

"UNCANNY" IN ITS ACTION UPON FIRE

DEALERS WANTED

If you are interested in adding to your income by spare time work or in building a permanent business for yourself without investment in stock, fixtures, etc., write for our new Dealer's Plan to

FYR-FYTER COMPANY
Dept. 20-40 DAYTON, OHIO

Shuredry SALVAGE COVERS

Reduce WATER DAMAGE *and* INSURANCE RATES

Three - fourths of all fire losses are directly chargeable to water damage. Reduce this hazard and better your record. Specify Shuredry Salvage Covers. Drill your men in their use. In every city where Shuredry Salvage covers are a part of regular equipment taxpayers have benefited.

Write our nearest plant for information and prices

Fulton Bag & Cotton Mills
Manufacturers Since 1870
ATLANTA ST. LOUIS DALLAS MINNEAPOLIS
NEW YORK NEW ORLEANS KANSAS CITY, KAN.

Checking Conflagration Possibilities

THE danger of a wide-spreading fire, commonly termed a conflagration, exists in varying degree in practically every city and town in the United States and Canada. Since 1900 more than 100 major conflagrations and hundreds of other fires of lesser extent have swept large groups of buildings.

The infrequency of conflagrations in any one locality tends to give fire protection officials as well as the public a false sense of security. There are many communities where the fire protection equipment is only designed to handle a single store or dwelling fire. For example, many small cities and towns have but a single pumper and only enough hose to provide at best three or four streams. If unfavorable conditions cause a fire to spread to adjoining structures or if flying brands carry the blaze to other parts of the community a conflagration may quickly develop. Unless substantial outside aid is quickly available few fire departments can cope with a conflagration once under way.

Also a typical water supply system for a small community may provide 1,000 to 1,500 gallons a minute in the center of town. However, in outlying residential districts the smaller flows which are enough to allow the fire department to handle an ordinary dwelling fire may be far from adequate to control a sweeping fire involving a number of buildings over a considerable area.

A large proportion of the great conflagrations of the past forty years have occurred in the months of April-May-June when dry weather conditions so often favor the rapid spread of fire. For this reason Spring is a good time for every community to check over its conflagration possibilities. The check-up should include a study of conditions which might allow a conflagration to develop. A study of the leading conflagrations shows that dry wooden shingle roofs have played a major role in more than half of such fires. Other factors include hazardous occupancies without proper private fire protection, dilapidated buildings, and congested areas where fires may spread from building to building through unprotected window and door openings.

From such a study many communities would conclude that they should strengthen their fire defenses by improving the water supply for fire fighting, providing additional pumping equipment, hose, auxiliary water tank apparatus for spark chasing, ladder equipment, and needed minor appliances.

N. F. P. A. Membership for Your Company or Department

Membership with unusual advantages is available to fire companies and fire departments through the Volunteer Firemen's Section of the National Fire Protection Association. Here's the simple plan:

Your company or department applies for regular membership in the N. F. P. A. and pays the minimum $10 annual dues. When the application is accepted, the company or department begins to receive at headquarters the monthly bulletins and publications sent regularly to all members of the Association. Also comes a 100-page *Quarterly* Magazine (four times during the membership year), a volume of annual Proceedings (over 400 pages), a Directory of members, and an Index to printed publications. You thus build up a nice fire library. Membership also places at the disposal of the company or department the Information Service of the Association.

Membership Plan Includes VOLUNTEER FIREMEN for Your Company or Department

The publications and services enumerated above are what regular N. F. P. A. members get for their $10 annual dues. The special membership plan of the Volunteer Firemen's Section provides that *in addition* you get VOLUNTEER FIREMEN magazine for the men in your company or department. (The $10 minimum dues allows you to enroll up to 20 men to receive the magazine: 50c per year extra for each man in excess of 20 enrolled.) VOLUNTEER FIREMEN is mailed to each man's home address.

USE THIS COUPON FOR SPECIAL MEMBERSHIP PLAN

If your company or department is now a member, pass this coupon to some other company or department which might like to enjoy the benefits of this plan.

National Fire Protection Association, 60 Batterymarch St., Boston, Mass.:

Please send me a membership application blank. I am interested in your special membership plan for our company or department.

Name .....

Rank .....
(Chief, Sec'y, Capt., etc.)

Name of Company or Department .....

.....

Address .....

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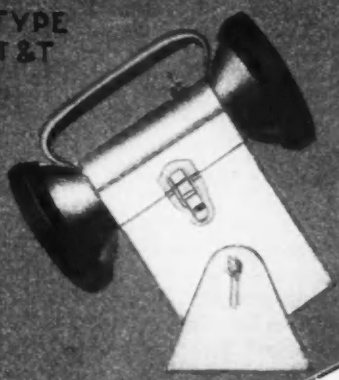

CLEARER VISIBILITY
for your Emergency Crews on blackest nights

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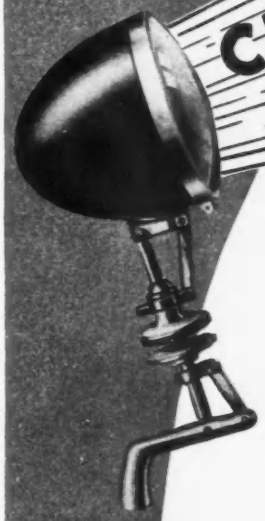

Type T & T—2-way beam and floodlight or white and red light **$9.90.**
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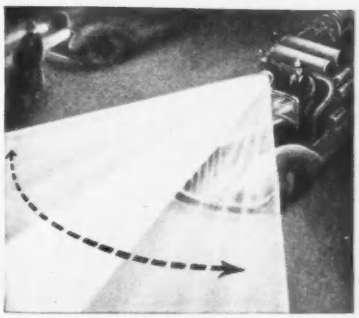

TYPE WW

From three users:

"When motorists see the red light flashing from curb to curb everything stops."

"The Wig-Wag cannot be praised too much. All fire trucks, patrol cars, officers' cars, and ambulances should be equipped."

"Nothing else as good at any price."

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TYPE WW

Type WS—World's finest hand searchlight—for the Chief **$45**

Type WW—Stationary lamp head—All moving parts enclosed—Trouble proof—Highly finished **$20.00**

A MASTER-LIGHT FOR EVERY NEED—*Send for folders*

A 10-DAY TRIAL OFFER *is yours without the slightest obligation.*

The Carpenter Mfg. Co.
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Please send this department

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Department .....

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179 Sidney St. Cambridge, Mass.

Volunteer Firemen

Volume 6 Number 4

Published by the National Fire Protection Association, a voluntary non-profit organization, 60 Batterymarch Street, Boston, Mass.

Franklin H. Wentworth Managing Director
Percy Bugbee Assistant Managing Director
Robert S. Moulton Technical Secretary
Horatio Rond Chief Engineer
Warren Y. Kimball Associate Editor

April, 1939

THE effectiveness of local regulation of fireworks has always been impeded by the bootlegging of fireworks from nearby communities which do not attempt to regulate their sale. Last year the Fire Marshals' Section of the N. F. P. A. launched a nation-wide movement to control fireworks through state laws. A model state fireworks law was prepared and has been introduced this year in twenty states. West Virginia has already passed it.

It has been enacted in Utah and in Indiana and is making progress in other states. The bill failed this year in Idaho. Among those lobbying against the bill in one state, Maryland, were certain volunteer fire companies which had made a profit out of the sale of fireworks.

According to figures compiled by the American Medical Association, last year alone there was one fatality in that state and 123 persons, most of them small children, suffered burns or other injury due to fireworks. In the United States during 1938 there were 20 fatalities due to fireworks and the astounding total of 7,205 persons were injured. It seems a little inconsistent that any volunteer fire department would promote the sale of articles tending to cause fire loss and personal injury.

The provisions of the proposed model fireworks law only prohibit the sale of fireworks at retail. This is for the purpose of keeping fireworks out of the hands of children. It provides for public displays of fireworks under the direction of a licensed operator.

As an intelligent approach to the fireworks problem, many fire departments give a July 4th fireworks show for the whole town. The project can be financed by sale of tickets at a nominal price. Such an arrangement should please everyone—children, and their parents. And the fireman's day should be better too—not marred by a succession of fires and ambulance calls.

THE 43rd annual meeting of the National Fire Protection Association is to be held in Chicago, May 8-12 this year. It will be convenient for many firemen and other members from the central and western sections of the United States and Canada to attend and participate.

The sessions are extremely interesting to all persons engaged in fire protection and fire fighting. Reports will be made by members of some thirty N. F. P. A. technical committees. Other experts who have specialized in various phases of fire protection will report on recent developments in the fire field.

One of the reports before the Association will be that of the Municipal Fire Apparatus Committee. This committee consisting of outstanding fire chiefs and other experts on modern fire apparatus, will recommend adoption by the N. F. P. A. of the new specifications for municipal fire apparatus. The Farm Fire Protection Committee will also present some amendments to existing recommendations for rural fire apparatus.

Another part of the program which is always of special interest to firemen is the report of the Committee on Visual Education. This Committee (which has such a formidable name), always makes its report almost exclusively with motion pictures on fire protection subjects. Among the most popular pictures each year is "Fires in Review," views of the outstanding fires occurring during the past year.

Also of special interest to firemen will be the tour of the great testing laboratories of the Underwriters' Laboratories, Inc. Visitors can see how such items as fire fighting appliances and building materials are tried out to determine their performance under actual fire conditions.

A program of the meeting will be mailed to members with the April NEWS-LETTER which member departments will receive at fire headquarters. A copy will be mailed to any other reader on request.

Any firemen, whether N. F. P. A. members or not, are welcome to attend the sessions and benefit from the discussions of fire problems.

MEMBERSHIP in the Volunteer Firemen's Section continues to grow. Last month 20 departments with 419 men joined the Volunteer Firemen's Section for the first time. In addition 57 fire departments with 1349 men renewed membership.

The total membership for the Section is now 645 departments and 14,152 firemen. The following including several industrial fire departments were enrolled during the past month:

Warren Fire Department, Warren, Arizona
Hollister Fire Department, Hollister, California
Wethersfield Fire Company No. 1, Wethersfield, Connecticut
The Sherwin Williams Company, Chicago, Illinois
Itasca Volunteer Fire Department, Itasca, Illinois
Brooklyn Community Volunteer Fire Company, Inc., Brooklyn, Maryland
Reese Fire Department, Reese, Michigan
Watervliet Paper Company Fire Department, Watervliet, Michigan
Columbia Falls Fire Relief Association, Columbia Falls, Montana
Stanhope Hose Company, Stanhope, New Jersey
Canisteo Fire Department, Canisteo, New York
O. L. Davis Fire Company No. 1, Endwell, New York
Wurtsboro Fire Company No. 1, Wurtsboro, New York
Elgin Volunteer Fire Department, Elgin, Oregon
Fogelsville Volunteer Fire Company No. 1, Fogelsville, Pennsylvania
United Fire Company, Montrose, Pennsylvania
Leo Independent Fire Engine Company No. 1, Red Lion, Pennsylvania
Wellsboro Fire Department, Wellsboro, Pennsylvania
Oak Lawn Fire Department, Oak Lawn, Rhode Island
Kingsville Volunteer Fire Department, Kingsville, Texas

A Problem Question FOR APRIL

Suggested for discussion at company and department meetings this month

89

What is a "water thief"? Describe some situations where it may be used.

The answer to the problem question for March will be found on page 4.

PROTECTION
FOR THE "PAGEANT OF THE PACIFIC"

Like other great Expositions of recent years,* the Golden Gate International Exposition in San Francisco is protected by A.D.T. Central Station Fire Protection Signaling Systems. In awarding the protection contract to A.D.T., officials of the Fair and of the insurance group underwriting the risk were influenced by the outstanding record of A.D.T. at previous Expositions throughout the country.

**Recent A.D.T. protected Expositions include "A Century of Progress" at Chicago; the "Texas Centennial" at Dallas; the "Great Lakes Exposition" at Cleveland; the "San Diego Exposition." "New York World's Fair 1939," opening April 30, also will be protected by A.D.T.*

On man-made "Treasure Island" in San Francisco Bay, the Golden Gate Exposition has a natural beauty and magnificence of scenic background never before approached by a World's Fair.

● The A.D.T. Protection System at the Golden Gate Exposition is one of the most comprehensive installations ever undertaken. "Backbone" of the system is the Aero Automatic Fire Alarm, which Fair regulations require in all buildings. Four hundred A.D.T. Manual Fire Alarm Boxes are strategically located throughout the grounds and buildings. Sprinkler Supervisory and Waterflow Alarm is provided in sprinklered areas. The A.D.T. Compulsory Tour System is employed in many of the buildings patrolled by watchmen. Burglar Alarm Service and Emergency Police Call also have been provided. In addition to the protection systems on the grounds and in the buildings operated by the Exposition, many of the 200 private exhibitors also are employing A.D.T. Protection Services.

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

Figuring Layouts

WITH 1½-INCH HOSE

MANY firemen are needlessly puzzled over the hydraulic layouts involved with the use of 1½-inch rubber lined hose. This may be because many fire stream performance tables are prepared for layouts of 2½-inch hose and do not apply to 1½-inch hose.

Actually all that any fire fighter needs to know about the performance of 1½-inch hose can be carried in his head. If a man knows what a good stream from a line of 1½-inch hose consists of he should have no difficulty in getting results when using it at a fire. Neither will he have to struggle with a lot of complicated formulas or tables.

For standard fire fighting work a good stream from 1½-inch hose consists of a discharge of about 50 gallons per minute at 45 pounds per square inch pressure through a ½-inch nozzle. This is a standard unit which is easy to remember. Every fireman using 1½-inch hose should know this just as he knows that with 45 pounds pressure a 1-inch nozzle will throw 200 gallons per minute.

Of course it is possible to use larger nozzle sizes on lines of 1½-inch hose but for most types of work the ½-inch nozzle tip is the most practical size. With larger nozzles and correspondingly larger flows the friction loss in this small hose increases rapidly. For example a ⅝-inch nozzle tip will cause over twice as much friction loss in a line of 1½-inch hose as will the ½-inch size operating at the same nozzle pressure. While this is not always important when short lines are being used, the extra friction loss may be a handicap under some conditions.

As a comparison which may be easily remembered, at the usual 45 pounds nozzle pressure, a ½-inch tip causes the same friction loss in a line of 1½-inch hose as a 1-inch tip causes in a line of 2½-inch hose.

APPROXIMATE FRICTION LOSS
Per 100 Feet of Rubber Lined Hose

Discharge in Gallons Per Minute	Friction Loss in 1½-inch Hose	Friction Loss in 2½-inch Hose
35	4.8	0.4
50	10.	0.8
75	20.	1.7
100	33.	2.8
150	72.	6.1
200	121.	10.
250		15.
300		22.

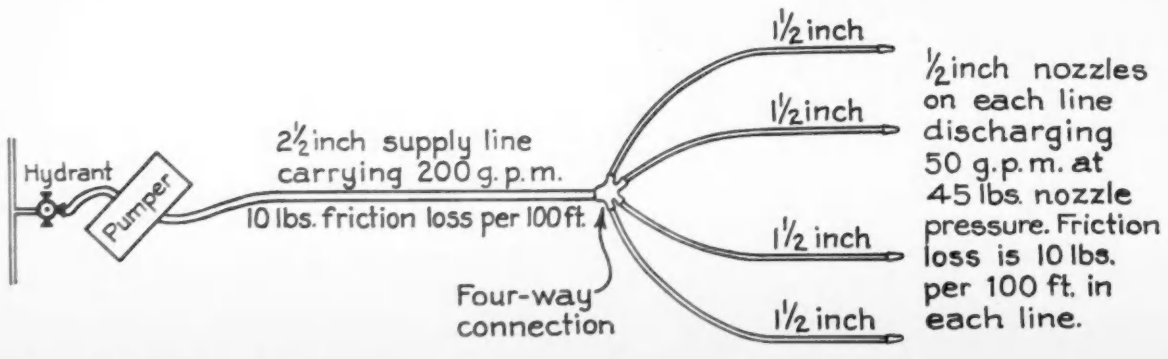
FOR a rough estimate of the amount of water which can be carried by a line of 1½-inch rubber lined fire hose it may be remembered that 1½-inch lines will carry just about one-quarter the amount of water that a 2½-inch line will carry with the same friction loss. For example 50 gallons of water per minute flowing through a 1½-inch line will cause about 10 pounds pressure loss due to friction in each 100 feet of hose. Two hundred gallons per minute (or four times as much water) will cause the same pressure loss in 2½-inch hose.

A 2½-inch line can supply four 1½-inch lines with approximately the same friction loss in both sizes of hose. Four 1½-inch lines discharging at 45 pounds pressure through ½-inch nozzle tips will throw a total of 200 gallons. With this layout the friction loss in both the 1½-inch and 2½-inch hose would be 10 pounds per 100 feet.

Of course, where a 2½-inch line is supplying only one 1½-inch line discharging through a ½-inch tip, the friction loss in the 2½-inch hose would be almost negligible, being less than one pound per 100 feet of hose. The important friction loss problem involved with such a layout is the friction loss in the 1½-inch leader line.

A VERY common fire fighting practice is to supply two 1½-inch leader lines from a single 2½-inch line. If the two leader lines are each discharging 50 gallons per minute the total flow through the 2½-inch hose will be 100 gallons per minute. This flow will cause a loss of pressure in the 2½-inch supply line amounting to only about three pounds per 100 feet of hose.

There is one other fact about the relative capacities of 1½-inch and 2½-inch hose that may be worth carrying in the head. As shown by the accompanying table, at any given flow the friction loss in 1½-inch hose is just about twelve times what it is when 2½-inch hose is used. For example with 50 gallons of water flowing through both sizes of hose the friction loss in the 1½-inch hose is about 10 pounds per 100 feet of hose while with 2½-inch hose the friction loss is only about 0.8 pounds. However as 1½-inch hose is not intended to carry the large amounts of water usually put through 2½-inch hose, the higher friction loss is not a material handicap.


1½ inch
1½ inch
1½ inch
1½ inch
½ inch nozzles on each line discharging 50 g.p.m. at 45 lbs. nozzle pressure. Friction loss is 10 lbs. per 100 ft. in each line.
2½ inch supply line carrying 200 g.p.m.
Hydrant
Pumper
10 lbs. friction loss per 100 ft.
Four-way connection

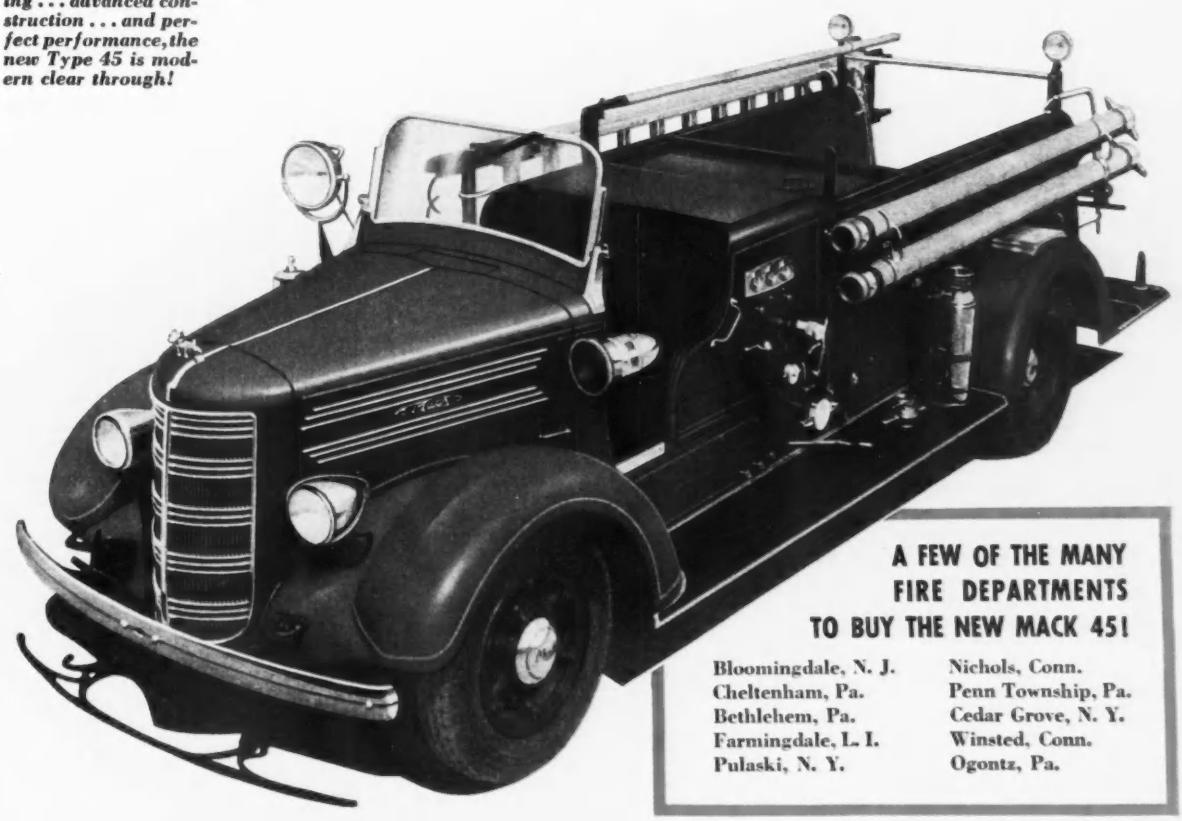
A NEW Mack PUMPER...

TYPE 45, 500 GALLON CAPACITY

AT THE LOWEST PRICE IN MACK HISTORY!

Here's a pumper that brings the benefits of Mack progressive fire engineering well within the reach of numerous departments working on limited budgets! • Long experience . . . vast resources . . . and extensive engineering facilities have combined to produce in this sensational new Mack, a unit of unrivaled dependability and outstanding road and pump performance. • And remember: back of the new Type 45 stand the greatest financial resources in the industry—a vast network of Mack-owned service stations—your best assurance of expert service with minimum delay and cost!

With streamline styling . . . advanced construction . . . and perfect performance, the new Type 45 is modern clear through!



A FEW OF THE MANY FIRE DEPARTMENTS TO BUY THE NEW MACK 45!

Bloomingdale, N. J.	Nichols, Conn.
Cheltenham, Pa.	Penn Township, Pa.
Bethlehem, Pa.	Cedar Grove, N. Y.
Farmingdale, L. I.	Winsted, Conn.
Pulaski, N. Y.	Ogontz, Pa.

MACK TRUCKS, INC. FIRE ENGINE DIVISION NEW YORK, N. Y.

OVER 4000 SATISFIED CUSTOMERS
USE
FEDELCODE SIRENS

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Listed by Underwriters' Laboratories, Inc.

• **Five different sizes to meet varying requirements. Also code sirens for special signals. Sound distributed in all directions from one mile to five miles. A vertical siren in your community would save lives—property — time. Rugged construction. Absolutely weatherproof. Built for many uses. Our bulletin No. 55 has complete description—ASK FOR IT TODAY!**

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VOLUNTEERS!
Get there FIRST
With a FEDERAL
VOLUNTEER SIREN

Model "O"

The New VOLUNTEER

Model "O", Black, only $14.00
Model "V", Chrome, only $15.00

■ NOW! A new siren built especially for VOLUNTEERS. Priced low to fit your purse. Its four fold value in service and protection pays you to invest in a good siren. Investigate, Now. No obligation.

1. Paves the way to the fire.
2. Protects your car against smash-up.
3. Added protection to pedestrians.
4. Gets you there first to save valuable property and lives.

ORDER YOUR SIREN TODAY!

Ask for full particulars in bulletin No. 62.

FEDERAL ELECTRIC COMPANY
8717 SOUTH STATE ST., CHICAGO, ILL.

$10.00-$3.00-$2.00 EACH MONTH

PYRENE PRIZE LETTER CONTEST

EACH month three fortunate firemen win cash prize awards for telling of effective work done with approved fire extinguishers. The monthly prizes are: first prize, $10.00; second prize, $3.00; and third prize, $2.00. These prizes go to the winners of the Pyrene Prize Letter Contest conducted jointly by the Pyrene Manufacturing Company of Newark, N. J., and VOLUNTEER FIREMEN. To win one of the prizes does not require any fancy writing ability. If you know of a fire where good work was done with an extinguisher just tell the facts in your own way. The judges want to know what type the extinguisher was (carbon tetrachloride, soda-acid, foam, carbon dioxide, calcium chloride, loaded stream or dry chemical). It is not necessary to tell the make of the extinguisher. The contest is open to members of fire departments including organized industrial brigades.

FIRST PRIZE—$10.00

R. W. PECK
Volunteer Fire Department,
Kentville, Nova Scotia

Saved Neighbor's House

"One afternoon several weeks ago, our next door neighbor came running over shouting that his house was on fire. I rushed to the telephone and rang in the alarm, then seized our soda-acid extinguisher from its stand in the hall and ran to the fire. Through the kitchen window all I could see was flames and dense smoke making it impossible to go inside. We broke a small pane of glass and turned the nozzle of the extinguisher on the fire. The flames were cut down almost immediately. After a few seconds I decided to go inside where I could make every ounce of water do more work. Keeping low I played the water on the flames until the extinguisher ran dry. By that time most of the fire was out. The fire department made a quick response and in a short time the fire was all out. The fire was confined to the kitchen. Owing to the headway of the fire when first noticed, and to the strong wind there is no doubt that the extinguisher prevented a serious if not total loss of the building."

SECOND PRIZE—$3.00

T. C. GEYER, *Chief*
Fire Department, Ellis, Kansas

Didn't Need Hose

"Last night one of our councilmen called me over the phone and said he believed he had a small fire at his home and asked me to come and investigate. As the temperature was four below zero and the streets were icy he did not wish to call out the entire department on what might be a false alarm. They had smelled the fire since early afternoon but did not become alarmed. On going upstairs to retire they noticed smoke. I was at my drug store and so picked up two 1-quart carbon tetrachloride extinguishers which I keep at the store and went up. He did have a smouldering fire between the first floor ceiling and the second floor around a brick chimney. It appeared to me that anything might happen when the fire got some air so I called the department and laid two 1½-inch leader lines before doing any ventilating. The lines were kept empty because of the low temperature. I armed five men with 1-quart and one with 1-gallon carbon tetrachloride extinguishers. We then cut a hole where the floor was hottest near the chimney. Three small holes and the partial contents of three extinguishers did the trick without any water damage and without an all night job of thawing frozen fire hose."

THIRD PRIZE—$2.00

F. M. SULLENS, *Chief*
Volunteer Fire Department,
Kellogg, Iowa

Saved Own Home

"Last March we had a bad sleet storm that disrupted our electric service so that it was impossible to turn in an alarm. Also we were without power for lights for about twenty-four hours. I was alone and in the evening got out my gasoline lantern, filled it up, and lighted it. Everything went along fine until I attempted to pump more air into the tank. Then the valve stuck and it spurted gasoline on me and all over the floor and table. The lantern then ignited the gasoline. By the time I got the fire out on my clothing the room was pretty much afire. I couldn't call the rest of the firemen except by individual telephone but I had a 1-quart carbon tetrachloride extinguisher. I knocked that fire out in about half a minute with a very small amount of fluid. I would have had a bad fire, if not a total loss, if I hadn't had that hand extinguisher."

HONORABLE MENTION

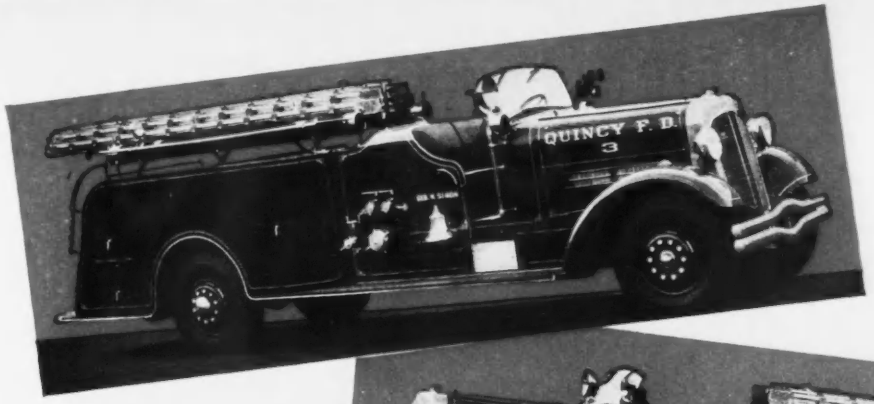
ALLAN H. CLARK, *Chief*, Fire Department, Lakefield, Ontario.

BLAIR F. SIMONS, *Director*, Chautauqua County Firemen's Fraternity, Inc., Stockton, N. Y.

DICK VALENTINER, Fire Department, Madeira, Ohio.

CONTEST RULES

1. Contestants in the Pyrene Prize Letter Contest must be members of their local fire department.
2. Letters are to describe actual experiences where an approved fire extinguisher of any make has saved lives or property.
3. Trade names may be used but will be deleted in publication. Publishers reserve the right to edit winning letters to permit publication.
4. Each contestant automatically vouches for the truth of the facts presented from his own or others' experience.
5. Only one letter may be submitted each month.
6. Letters must be legibly written in ink or typewritten on white paper, one side only. Preference will be given to letters not over 250 words in length.
7. Letters received after the 8th of the month will be judged in following month's competition.
8. Monthly prizes in cash will be: 1st, $10.00; 2nd, $3.00; and 3rd, $2.00.
9. Address contest letters to Pyrene Prize Letter Contest, National Fire Protection Association, 60 Batterymarch St., Boston, Mass.



MODERN *in design — Ahrens-Fox Pumpers combine the greatest possible utility with pleasing lines and sensible style.*

REAR VIEW *shows broad foot rest, handy grip rail, and other features.*

Any way You Look at this New

AHRENS-FOX PUMPING ENGINE

You can See It's a GREAT FIRE FIGHTER

HERE'S a three-way view of one of two Ahrens-Fox Pumping Engines just delivered to Quincy, Illinois. Varying slightly in equipment and design, each is "tailor-made" for the districts in which it will serve.

Fire departments in many parts of the world depend upon the Ahrens-Fox apparatus that is built to meet their specific needs to perform reliably and give superior service to their communities.

Ahrens-Fox engineers will gladly assist you in working out specifications and designs of modern apparatus for the particular needs of your community. There is no obligation on your part. Write today.

THE AHRENS-FOX FIRE ENGINE CO. **CINCINNATI, OHIO, U. S. A.**

AHRENS-FOX QUALITY

EVERY TYPE OF PUMP FOR EVERY TYPE OF SERVICE

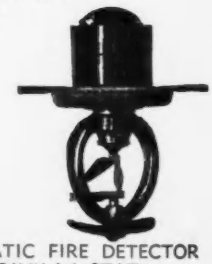
GAMEWELL FIRE ALARM SYSTEMS

— Protect Earnings —

Earnings depend upon production. Fire interrupts the continuity of business and is reflected in the loss of uninsurable values far greater than the replaceable physical values destroyed. *Delays* in *discovery* and *announcement*— the principal causes of large Fire Losses — are minimized by Gamewell Fire Alarm Systems.

The Vitaguard Fire Alarm System in addition to facilities for manual operation embraces also the automatic fire detecting feature which discovers Fire in its incipiency and automatically announces the location. For the smaller communities Vitaguard affords ideal public fire alarm protection with convenient facilities for extending the protection to the interior of private properties and institutions.

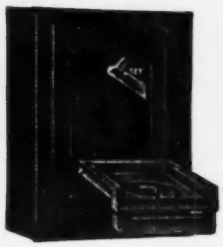
AUTOMATIC FIRE DETECTOR
TYPE SF-4



AUTOMATIC FIRE DETECTOR
SPRINK-LA-STAT

VITAGUARD FIRE ALARM BOX
CLOSED

VITAGUARD
CENTRAL CONTROL
UNIT



VITAGUARD FIRE ALARM BOX
OPEN

TYPICAL USERS OF

GAMEWELL ALARM SYSTEMS

Bell Telephone Companies
200 properties
City, County and State Institutions
Atchison, Topeka & Santa Fe RR. Co.
Boston & Maine RR. Co.
Bush Terminal Company
Chicago, Northwestern RR. Co.
Erie RR. Co.
Hudson & Manhattan RR. Co.
New York Central RR. Co.
Pennsylvania R. R. Co.
Union Pacific RR. Co.
General Electric Co.
Westinghouse Electric & Mfg. Co.
American Steel & Wire Co.
Bethlehem Steel Co.
Carnegie Steel Co.
Youngstown Sheet & Tube Co.
U.S. Government—66 properties
American Smelting & Refining Co.
Armour & Co.

Simplicity, flexibility, ruggedness and reliability are dominant characteristics of the Vitaguard Fire Alarm System. Catalog upon application.

THE GAMEWELL COMPANY

Specialists In Public Safety

NEWTON UPPER FALLS
MASSACHUSETTS

TYPICAL USERS OF

GAMEWELL ALARM SYSTEMS

General Motors Corporation
Colgate & Company
Dennison Mfg. Co.
DuPont de Nemours & Co.
Eastman Kodak Co.
Ford Motor Co.
Ingersoll-Rand Co.
International Harvester Co.
National Carbon Co.
New Amsterdam Gas Co.
Pittsburgh Plate Glass Co.
Pullman Car & Mfg. Co.
Remington Arms Co.
John A. Roeblings Sons Co.
Singer Sewing Machine Co.
Electric Storage Battery Co.
Standard Oil Co.
RCA-Victor Talking Machine Co.
Zenith Furnace Co.

2000 Municipalities